

#2

OIEP

## RAW SEQUENCE LISTING

DATE: 12/05/2001

PATENT APPLICATION: US/09/995,529

TIME: 10:44:52

Input Set : A:\Ix4976.txt

Output Set: N:\CRF3\11212001\I995529.raw

ENTERED

4 <110> APPLICANT: Watkins, Jeffry D.  
5 Huse, William D.  
6 Tang, Ying  
8 <120> TITLE OF INVENTION: Humanized Collagen Antibodies and  
9 Related Methods  
11 <130> FILE REFERENCE: P-IX 4976  
C--> 13 <140> CURRENT APPLICATION NUMBER: US/09/995,529  
C--> 13 <141> CURRENT FILING DATE: 2001-11-26  
13 <160> NUMBER OF SEQ ID NOS: 358  
15 <170> SOFTWARE: FastSEQ for Windows Version 4.0  
17 <210> SEQ ID NO: 1  
18 <211> LENGTH: 339  
19 <212> TYPE: DNA  
20 <213> ORGANISM: Mus musculus  
22 <220> FEATURE:  
23 <221> NAME/KEY: CDS  
24 <222> LOCATION: (1)...(339)  
26 <400> SEQUENCE: 1  
27 gac att gtg atg aca cag tct cca tct ttg ttg agt gtg tca gca gga 48  
28 Asp Ile Val Met Thr Gln Ser Pro Ser Leu Leu Ser Val Ser Ala Gly  
29 1 5 10 15  
31 gag aag gtc act atg agc tgc aag tcc agt cag agt ctg tta aac agt 96  
32 Glu Lys Val Thr Met Ser Cys Lys Ser Ser Gln Ser Leu Leu Asn Ser  
33 20 25 30  
35 gga aat caa aag aac tac ttg gcc tgg tac cag cag aaa cca ggg cag 144  
36 Gly Asn Gln Lys Asn Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln  
37 35 40 45  
39 cct cct aaa ctg ttg atc tat ggg gca tcc act agg gaa tct ggg gtc 192  
40 Pro Pro Lys Leu Leu Ile Tyr Gly Ala Ser Thr Arg Glu Ser Gly Val  
41 50 55 60  
43 cct gat cgc ttc aca ggc agt gga tct gga acc gat ttc act ctt atc 240  
44 Pro Asp Arg Phe Thr Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Ile  
45 65 70 75 80  
47 atc agc agt gtg cag gct gaa gac ctg gca gtt tat tac tgt cag aat 288  
48 Ile Ser Ser Val Gln Ala Glu Asp Leu Ala Val Tyr Tyr Cys Gln Asn  
49 85 90 95  
51 gat cat agt tat ccg tac acg ttc gga ggg ggg acc aag ctg gaa ata 336  
52 Asp His Ser Tyr Pro Tyr Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile  
53 100 105 110  
55 aaa 339  
56 Lys  
60 <210> SEQ ID NO: 2  
61 <211> LENGTH: 113  
62 <212> TYPE: PRT  
63 <213> ORGANISM: Mus musculus  
65 <400> SEQUENCE: 2  
66 Asp Ile Val Met Thr Gln Ser Pro Ser Leu Leu Ser Val Ser Ala Gly

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67 1          5          10          15
68 Glu Lys Val Thr Met Ser Cys Lys Ser Ser Gln Ser Leu Leu Asn Ser
69          20          25          30
70 Gly Asn Gln Lys Asn Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln
71          35          40          45
72 Pro Pro Lys Leu Leu Ile Tyr Gly Ala Ser Thr Arg Glu Ser Gly Val
73          50          55          60
74 Pro Asp Arg Phe Thr Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Ile
75 65          70          75          80
76 Ile Ser Ser Val Gln Ala Glu Asp Leu Ala Val Tyr Tyr Cys Gln Asn
77          85          90          95
78 Asp His Ser Tyr Pro Tyr Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile
79          100          105          110
80 Lys
84 <210> SEQ ID NO: 3
85 <211> LENGTH: 360
86 <212> TYPE: DNA
87 <213> ORGANISM: Mus musculus
89 <220> FEATURE:
90 <221> NAME/KEY: CDS
91 <222> LOCATION: (1)...(360)
93 <400> SEQUENCE: 3
94 gag gtg aag ctt ctc gag tct gga ggt ggc ctg gtg cag cct gga gga 48
95 Glu Val Lys Leu Leu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
96 1          5          10          15
98 tcc ctg aaa ctc tcc tgt gca gcc tca gga ttc gat ttt agt aga tac 96
99 Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Asp Phe Ser Arg Tyr
100          20          25          30
102 tgg atg agt tgg gtc cgg cag gct cca ggg aaa ggg cta gaa tgg att 144
103 Trp Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
104          35          40          45
106 gga gaa att aat cca gat agc agt acg ata aac tat acg cca tct cta 192
107 Gly Glu Ile Asn Pro Asp Ser Ser Thr Ile Asn Tyr Thr Pro Ser Leu
108          50          55          60
110 aag gat aaa ttc atc atc tcc aga gac aac gcc aaa aat acg ctg tac 240
111 Lys Asp Lys Phe Ile Ile Ser Arg Asp Asn Ala Lys Asn Thr Leu Tyr
112 65          70          75          80
114 ctg caa atg agc aaa gtg aga tct gag gac aca gcc ctt tat tac tgt 288
115 Leu Gln Met Ser Lys Val Arg Ser Glu Asp Thr Ala Leu Tyr Tyr Cys
116          85          90          95
118 gca aga ccg gtt gat ggt tac tac gat gct atg gac tac tgg ggt caa 336
119 Ala Arg Pro Val Asp Gly Tyr Tyr Asp Ala Met Asp Tyr Trp Gly Gln
120          100          105          110
122 gga acc tca gtc acc gtc tcc tca 360
123 Gly Thr Ser Val Thr Val Ser Ser
124          115          120
127 <210> SEQ ID NO: 4
128 <211> LENGTH: 120
129 <212> TYPE: PRT

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130 <213> ORGANISM: Mus musculus
132 <400> SEQUENCE: 4
133 Glu Val Lys Leu Leu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
134 1 5 10 15
135 Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Asp Phe Ser Arg Tyr
136 20 25 30
137 Trp Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
138 35 40 45
139 Gly Glu Ile Asn Pro Asp Ser Ser Thr Ile Asn Tyr Thr Pro Ser Leu
140 50 55 60
141 Lys Asp Lys Phe Ile Ile Ser Arg Asp Asn Ala Lys Asn Thr Leu Tyr
142 65 70 75 80
143 Leu Gln Met Ser Lys Val Arg Ser Glu Asp Thr Ala Leu Tyr Tyr Cys
144 85 90 95
145 Ala Arg Pro Val Asp Gly Tyr Tyr Asp Ala Met Asp Tyr Trp Gly Gln
146 100 105 110
147 Gly Thr Ser Val Thr Val Ser Ser
148 115 120
151 <210> SEQ ID NO: 5
152 <211> LENGTH: 305
153 <212> TYPE: DNA
154 <213> ORGANISM: Homo sapiens
156 <400> SEQUENCE: 5
157 gac atc gtg atg acc cag tct cca gac tcc ctg gct gtg tct ctg ggc 48
158 gag agg gcc acc atc aac tgc aag tcc agc cag agt gtt tta tac agc 96
159 tcc aac aat aag aac tac tta gct tgg tac cag cag aaa cca gga cag 144
160 cct cct aag ctg ctc att tac tgg gca tct acc cgg gaa tcc ggg gtc 192
161 cct gac cga ttc agt ggc agc ggg tct ggg aca gat ttc act ctc acc 240
162 atc agc agc ctg cag gct gaa gat gtg gca gtt tat tac tgt cag caa 288
163 tat tat agt act cct cc 305
165 <210> SEQ ID NO: 6
166 <211> LENGTH: 113
167 <212> TYPE: PRT
168 <213> ORGANISM: Homo sapiens
170 <400> SEQUENCE: 6
171 Asp Ile Val Met Thr Gln Ser Pro Asp Ser Leu Ala Val Ser Leu Gly
172 1 5 10 15
173 Glu Arg Ala Thr Ile Asn Cys Lys Ser Ser Gln Ser Val Leu Tyr Ser
174 20 25 30
175 Ser Asn Asn Lys Asn Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln
176 35 40 45
177 Pro Pro Lys Leu Leu Ile Tyr Trp Ala Ser Thr Arg Glu Ser Gly Val
178 50 55 60
179 Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr
180 65 70 75 80
181 Ile Ser Ser Leu Gln Ala Glu Asp Val Ala Val Tyr Tyr Cys Gln Gln
182 85 90 95
183 Asp His Ser Tyr Pro Tyr Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile
184 100 105 110

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Input Set : A:\Ix4976.txt

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185 Lys
189 <210> SEQ ID NO: 7
190 <211> LENGTH: 294
191 <212> TYPE: DNA
192 <213> ORGANISM: Homo sapiens
194 <400> SEQUENCE: 7
195 gag gtg cag ctg gtg gag tct ggg gga ggc ttg gtc cag cct ggg ggg 48
196 tcc ctg aga ctc tcc tgt gca gcc tct gga ttc acc ttt agt agc tat 96
197 tgg atg agc tgg gtc cgc cag gct cca ggg aag ggg ctg gag tgg gtg 144
198 gcc aac ata aag caa gat gga agt gag aaa tac tat gtg gac tct gtg 192
199 aag ggc cga ttc acc atc tcc aga gac aac gcc aag aac tca ctg tat 240
200 ctg caa atg aac agc ctg aga gcc gag gac acg gct gtg tat tac tgt 288
201 gcg aga 294
203 <210> SEQ ID NO: 8
204 <211> LENGTH: 120
205 <212> TYPE: PRT
206 <213> ORGANISM: Homo sapiens
208 <400> SEQUENCE: 8
209 Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
210 1 5 10 15
211 Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
212 20 25 30
213 Trp Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
214 35 40 45
215 Ala Asn Ile Lys Gln Asp Gly Ser Glu Lys Tyr Tyr Val Asp Ser Val
216 50 55 60
217 Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr
218 65 70 75 80
219 Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
220 85 90 95
221 Ala Arg Pro Asp Tyr Tyr Tyr Tyr Tyr Gly Met Asp Val Trp Gly Gln
222 100 105 110
223 Gly Thr Thr Val Thr Val Ser Ser
224 115 120
227 <210> SEQ ID NO: 9
228 <211> LENGTH: 336
229 <212> TYPE: DNA
230 <213> ORGANISM: Mus musculus
232 <220> FEATURE:
233 <221> NAME/KEY: CDS
234 <222> LOCATION: (1)...(336)
236 <400> SEQUENCE: 9
237 gat gtt ttg atg acc caa act cca ctc tcc ctg cct gtc agt ctt gga 48
238 Asp Val Leu Met Thr Gln Thr Pro Leu Ser Leu Pro Val Ser Leu Gly
239 1 5 10 15
241 gat caa gcc tcc atc tct tgc aga tct agt cag agc att gta cat agt 96
242 Asp Gln Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Ile Val His Ser
243 20 25 30
245 aat gga aac acc tat tta gaa tgg tac ctg cag aaa cca ggc cag tct 144

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```

246 Asn Gly Asn Thr Tyr Leu Glu Trp Tyr Leu Gln Lys Pro Gly Gln Ser
247      35      40      45
249 cca aag ctc ctg atc tac aaa gtt tcc aac cga ttt tct ggt gtc cca 192
250 Pro Lys Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro
251      50      55      60
253 gac agg ttc agt ggc agt gga tca ggg aca gat ttc aca ctc aag atc 240
254 Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile
255 65      70      75      80
257 agc aga gtg gag gct gag gat ctg gga gtt tat tac tgc ttt caa ggt 288
258 Ser Arg Val Glu Ala Glu Asp Leu Gly Val Tyr Tyr Cys Phe Gln Gly
259      85      90      95
261 tca cat gtt ccg tgg acg ttc ggt gga ggc acc aag ctg gaa atc aaa 336
262 Ser His Val Pro Trp Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys
263 100      105      110
267 <210> SEQ ID NO: 10
268 <211> LENGTH: 112
269 <212> TYPE: PRT
270 <213> ORGANISM: Mus musculus
272 <400> SEQUENCE: 10
273 Asp Val Leu Met Thr Gln Thr Pro Leu Ser Leu Pro Val Ser Leu Gly
274 1      5      10      15
275 Asp Gln Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Ile Val His Ser
276      20      25      30
277 Asn Gly Asn Thr Tyr Leu Glu Trp Tyr Leu Gln Lys Pro Gly Gln Ser
278      35      40      45
279 Pro Lys Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro
280      50      55      60
281 Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile
282 65      70      75      80
283 Ser Arg Val Glu Ala Glu Asp Leu Gly Val Tyr Tyr Cys Phe Gln Gly
284      85      90      95
285 Ser His Val Pro Trp Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys
286      100      105      110
289 <210> SEQ ID NO: 11
290 <211> LENGTH: 369
291 <212> TYPE: DNA
292 <213> ORGANISM: Mus musculus
294 <220> FEATURE:
295 <221> NAME/KEY: CDS
296 <222> LOCATION: (1)...(369)
298 <400> SEQUENCE: 11
299 cag gtt act ctg aaa gag act ggc cct ggg ata ttg cag ccc tcc cag 48
300 Gln Val Thr Leu Lys Glu Thr Gly Pro Gly Ile Leu Gln Pro Ser Gln
301 1      5      10      15
303 acc ctc agt ctg act tgt tct ttc tct ggg ttt tca ctg agc act tct 96
304 Thr Leu Ser Leu Thr Cys Ser Phe Ser Gly Phe Ser Leu Ser Thr Ser
305      20      25      30
307 ggt atg ggt gta ggc tgg att cgt cag cct tca gga gag ggt cta gag 144
308 Gly Met Gly Val Gly Trp Ile Arg Gln Pro Ser Gly Glu Gly Leu Glu

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Use of n and / or Xaa has been detected in the Sequence Listing. Review the Sequence Listing to ensure a corresponding explanation is present in the <220> to <223> fields of each sequence using n or Xaa.

VERIFICATION SUMMARY  
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Input Set : A:\Ix4976.txt  
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L:13 M:270 C: Current Application Number differs, Replaced Current Application No  
L:13 M:271 C: Current Filing Date differs, Replaced Current Filing Date  
L:3121 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:224  
L:3137 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:225  
L:3153 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:226  
L:3169 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:227  
L:3185 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:228  
L:3201 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:229  
L:3217 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:230  
L:3233 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:231  
L:3249 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:232  
L:3265 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:233  
L:3281 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:234  
L:3297 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:235  
L:3313 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:236  
L:3329 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:237  
L:3345 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:238  
L:3361 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:239  
L:3377 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:240  
L:3393 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:241  
L:3409 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:242  
L:3425 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:243  
L:3441 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:244  
L:3457 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:245  
L:3473 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:246  
L:3489 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:247  
L:3505 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:248  
L:3521 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:249  
L:3537 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:250  
L:3553 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:251  
L:3569 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:252  
L:3585 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:253  
L:3601 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:254  
L:3617 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:255  
L:3633 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:256  
L:3649 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:257  
L:3665 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:258  
L:3681 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:259  
L:3697 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:260  
L:3713 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:261  
L:3729 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:262  
L:3745 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:263  
L:3761 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:264  
L:3777 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:265  
L:3793 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:266  
L:3809 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:267  
L:3825 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:268  
L:3841 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:269

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L:3857 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:270  
L:3873 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:271  
L:3889 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:272  
L:3905 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:273